

**Claims:**

1. A process for eco-friendly synthesis of bromobenzene which comprises the steps of:
  - (i) dissolving about 200 to 400 grams of a brominating reagent containing about 35 to 45% wt/wt of active bromine per liter of water to obtain an aqueous solution;
  - (ii) adding about 2 to 10 mole equivalents of benzene per atom of bromine to the aqueous solution of step (i);
  - (iii) adding a surfactant to the mixture of step (ii) under constant stirring;
  - (iv) refluxing the reaction mixture of step (iii) at temperature in the range of about 50 to 80°C;
  - (v) adding a mineral acid in the concentration range of about 3 to 4 equivalents per atom of bromine to the refluxed reaction mixture of step (iv);
  - (vi) stirring the mixture of step (v) for a time period in the range of about 20 to 48 hours at elevated temperatures;
  - (vii) cooling the mixture of step (vi) and separating the same into an organic layer and an aqueous layer;
  - (viii) extracting the aqueous layer of step (vii) with an organic solvent;
  - (ix) combining the extracts of the organic layers and washing the layers successively with water and brine;
  - (x) drying the organic layer of step (ix) over anhydrous sodium sulfate, and
  - (xi) stripping off the organic solvent to obtain crude product and distilling the crude product to obtain clear and colorless bromobenzene.
2. A process as claimed in claim 1 wherein in step (i), the brominating reagent used contains about 40% wt/wt of active bromine.
3. A process as claimed in claim 1 wherein in step (i), the brominating agent used has bromide to bromate ratio in the range of about 1.8:1 to about 2.2:1.
4. A process as claimed in claim 1 wherein in step (iii), the surfactant used is sodium lauryl sulfate.

5. A process as claimed in claim 1 wherein in step (iv), the reaction mixture is refluxed using water condenser.
6. A process as claimed in claim 1 wherein in step (v), the mineral acid used is selected from sulfuric acid, hydrochloric acid and perchloric acid.
7. A process as claimed in claim 1 wherein in step (v), the mineral acid is added to the refluxed reaction mixture at the rate of about 1.5 to 4.0 m/hour.
8. A process as claimed in claim 7, wherein the sulfuric acid added is about 50% aqueous sulfuric acid.
9. A process as claimed in claim 7, wherein the hydrochloric acid added is about 35% aqueous hydrochloric acid.
10. A process as claimed in claim 7, wherein the perchloric acid added is about 70% aqueous perchloric acid.
11. A process as claimed in claim 1 wherein in step (vi), the mixture is heated at temperatures ranging between 50 to 80°C.
12. A process as claimed in claim 1 wherein in step (vii), the mixture is cooled to room temperature and separated into an organic layer and an aqueous layer.
13. A process as claimed in claim 1 wherein in step (viii), the organic solvent used is selected from the group comprising of ether, dichloromethane, dichloroethane, ethyl acetate, petroleum ether and benzene.
14. A process as claimed in claim 1 wherein in step (xi), the organic solvent is stripped off at reduced pressure.
15. A process as claimed in claim 1 herein in step (xi), the crude product is distilled under vacuum.
16. A process as claimed in claim 1, wherein the bromobenzene thus obtained has boiling point in the range of 154-156°C.
17. A process as claimed in claim 1, wherein the yield of bromobenzene obtained is in the range of 50 to 90%.